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Case Report

Paragonimiasis: An unusual cause of Cor pulmonale; A case report

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ABSTRACT

Paragonimiasis is a parasitic disease caused by the trematode *Paragonimus*. It follows ingestion of raw or improperly cooked or pickled crab and crayfish. Adult worms can survive for 20 years.

A 42-year-old rural dweller was seen at the chest unit with a three month history of cough, chest pain and haemoptysis and a ten week history of bilateral leg swelling. He recalled that his problem dated back to 18 years ago when he first had cough with rusty brown sputum and chest pain. He was treated for pulmonary tuberculosis even though sputum examination did not reveal any AAFB on two occasions. Further enquiries showed that he had enjoyed fishing and hunting for crabs in his adolescent years and ate the young crabs raw. Abnormal findings were mild central cyanosis, pitting leg and scrotal edema jugular venous pulsation was elevated with tender hepatomegaly. Sputum for ova of paragonimiasis which was positive. Packed cell volume was 55%, ESR of 15 mm in the 1st hour. Chest radiograph: patchy opacities, tubular shadowing and prominent pulmonary conus. Echocardiography showed dilated right atrium and ventricle without septal and valvular lesions. Sputum AAFB, A diagnosis of Cor pulmonale due to Paragonimiasis was made and patient treated with Praziquantel.

The patient improved markedly and repeated X-ray showed some improvement in the features. Paragonimiasis is an important tropical lung disease. The most frequent symptoms are cough and haemoptysis. The radiological features include cavities, cysts, calcified nodules all of which make differentiation from pulmonary tuberculosis difficult. In endemic areas, patients who complain of cough and haemoptysis should have their sputum examined by an experienced microbiologist for paragonimiasis.

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1. Introduction

Paragonimiasis is a parasitic disease caused by the trematode *Paragonimus* (lung fluke). It is common in the Far East with endemic foci in West Africa, South and South East Asia, Pacific's, Indonesia, and New Guinea. The parasite is a fluke about 1 cm in length whose eggs are shed in the host's sputum (or faeces if the sputum is swallowed). Infection follows ingestion of raw or improperly cooked or pickled crab or crayfish.^{1,2} Adult worms can survive 20 years thus infection can be chronic.^{3,4} In Nigeria, paragonimiasis was first described in 1964.⁵ Following an outbreak, some parts of the present Imo and Abia States(Nigeria) were recognized as endemic areas for paragonimiasis.⁶

2. Case presentation

A 42-year-old rural dweller from Ozuitem, Bende LGA in Nigeria was seen at the chest unit with a three month history of cough,

haemoptysis and chest pain, and a ten week history of bilateral leg swelling. He recalled that his problem dated back to 18 years ago when he first had cough with rusty brown sputum and pleuritic chest pain. He was treated for pulmonary tuberculosis even though sputum examination did not reveal any AAFB. Ten years later he represented with haemoptysis and was again treated with a full course of anti tuberculosis drugs with minimal relief. Three months prior to presentation his condition deteriorated with cough, haemoptysis, night sweats weight loss. He resorted to native remedies but was compelled to come to the hospital when his legs began to swell. Further history revealed that the patient enjoyed fishing and crab hunting as a hobby in his adolescent years and ate the young crabs raw. He was unmarried on account of his frequent illness.

Examination revealed an asthenic man with mild central cyanosis, pitting leg edema up to the knees and scrotal edema. There was flattening of the right upper anterior chest wall central trachea, with diminished chest expansion on the entire right hemithorax. There were coarse crepitations in the entire right hemithorax and in the left upper zone anteriorly. The pulse rate, blood pressure, apex beat and heart sounds were normal but the jugular venous pulsation was raised. There was a soft tender hepatomegaly. The rest of the examination was normal. Investigations requested

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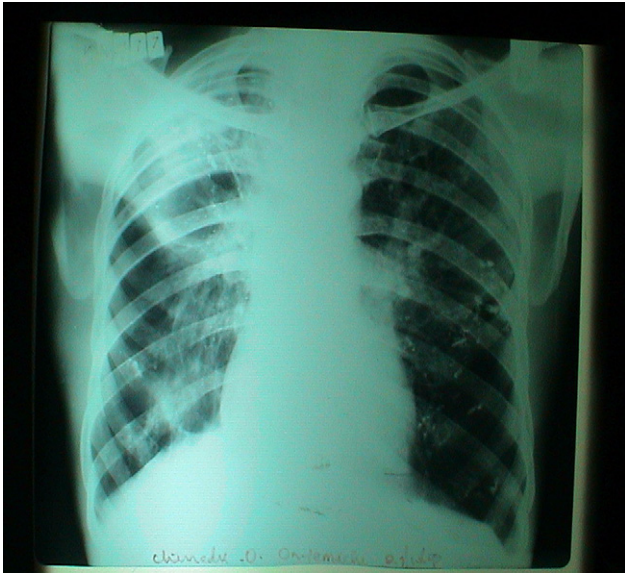


Fig. 1. Pre treatment chest x-ray.

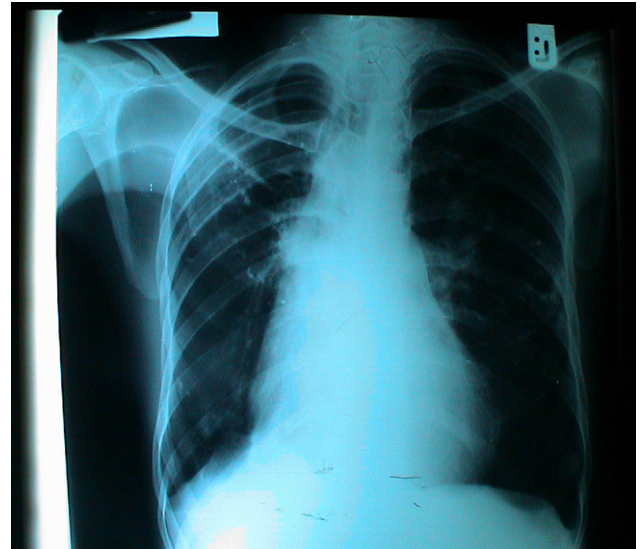


Fig. 2. Post treatment chest x-ray.

for included sputum for ova of *Paragonimus* which was positive, packed cell volume of 55%, normal ESR 15 mm/1st hour (Wester-green). Chest radiograph (Fig. 1) showed multiple calcific nodules of varying sizes scattered all through both lung fields. There was loss of volume in the right lower zone which also showed patchy opacities and tubular shadowing. The right hemidiaphragm was elevated suggesting volume loss in the right upper lung zone. It also showed nodular calcifications. The left hemidiaphragm was lobulated and showed punctuated calcific densities. The pulmonary conus was prominent, the aorta and cardiothoracic ratio were within normal. Electrocardiogram revealed tall peaked p waves while 2 dimensional echocardiography showed dilated right atrium and ventricle without septal or valvular defects and good left ventricular contractility. Serum electrolytes, sputum culture, sputum AAFB, urinalysis were normal. A diagnosis of Cor pulmonale secondary to pulmonary paragonimiasis was made and the patient treated with Praziquantel 25 mg/kg in three divided doses for 3 days as well as diuretics. A repeat treatment was done following reappearance of ova of paragonimiasis two months later. A repeat chest (Fig. 2) radiograph showed some improvement in radiological features and the patient also improved clinically with marked improvement of the Cor pulmonale.

3. Discussion

Paragonimiasis is an important tropical lung infection.⁷ It however can cause extra pulmonary disease when the adult worms miss their way to the lungs and end up in the peritoneum, subcutaneous tissue, muscles, or brain. More than 30 species of the trematode are known to infect man and animals and 10 of these infect man.³ *Paragonimus Westermanii* is the commonest. The infection follows when crabs and crayfish infected by the metacercariae are eaten raw or pickled. The most frequent symptoms are cough, haemoptysis and chest pain.^{8,9} The radiological

features range from fine transient infiltrates to cavities, cysts, calcified nodules, and effusions. These make differentiation from pulmonary tuberculosis difficult^{4,8,10} especially in tuberculosis endemic areas. The two conditions have been known to coexist.⁹ Cases of pulmonary paragonimiasis have been reported but paragonimiasis as a cause of Cor pulmonale is rare. This further strengthens the fact of its chronicity. A high index of suspicion is needed to make a diagnosis of pulmonary paragonimiasis especially now that the HIV pandemic has contributed to the upsurge of tuberculosis. In patients who complain of cough and haemoptysis a simple examination of the phlegm by an experienced microbiologist should be done to rule out pulmonary paragonimiasis.^{9,10} This will help detect early cases for which treatment can be rewarding¹⁰ and prevent potentially complicated clinical course such as in our index case.

Conflict of interest

There is no potential conflict of interest by any of the authors.

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